

REMARKS

The Office Action mailed on January 23, 2009, has been received and its contents carefully considered. Additionally attached to this Amendment is a Petition for a One-Month Extension of Time, extending the period for response to May 23, 2009.

Claims 1 and 4-15 are pending in this application. By this Amendment, claims 1 and 4-7 are pending in this application. Claims 10-15 are added. Support for these added claims may be found in paragraphs [0028]-[0030], [0044]-[0045] and [0060]-[0062]. Claims 8 and 9 are withdrawn from consideration as directed to nonelected subject matter. Claims 2 and 3 are canceled without prejudice to or disclaimer of the subject matter recited in those claims, as the subject matter previously recited in claim 3 is incorporated into pending claim 1. Claims 1, 8 and 15 are independent. Reconsideration of this application in view of the above amendments and the following remarks is respectfully requested.

The Office Action states that claim 3 recites allowable subject matter. Applicants note this statement of allowability with satisfaction, and base the above amendments on this indication. Specifically, the subject matter previously recited in claim 3 is incorporated into independent claim 1. Therefore, it is respectfully submitted that independent claim 1 recites allowable subject matter. Claim 15 recites subject matter similar to that recited in claim 1, and therefore also recites allowable subject matter.

The Office Action objects to claims 2-7 for various informalities. Claims 4-7 are amended to obviate these objections. The cancellation of claims 2 and 3 renders this objection moot with respect to those claims. Withdrawal of the above objections are thus respectfully requested.

AMENDMENT

10/577,450

The Office Action objects to Fig. 4(a) for incorrect labels. However, this objection is incorrect. Fig. 4(a) correctly shows an arrow labeled “1” denoting a primary chip and a line labeled “11” denoting a semiconductor substrate. Support for these labels may be found in paragraph [0028] of the disclosure of this application. The Office Action indicates that the line of Fig. 4(a) should be labeled with an “11” as it is currently labeled. Withdrawal of the above objection to Fig. 4 is thus respectfully requested.

The Office Action rejects claims 1-7 under 35 U.S.C. §112, second paragraph, as being indefinite. This rejection is respectfully traversed. The cancellation of claims 2 and 3 renders this rejection moot with respect to those claims.

The Office Action asserts that claim 1 is indefinite based on the disclosure of *ASM Handbook Online: Volume 3, Alloy Phase Diagrams* (hereinafter “ASM”). Specifically, the Office Action asserts that an elemental metal “does not always” have a melting point below an alloy of that metal with another based on ASM, and therefore that the language the second metal material having a lower melting point in an elemental state than an alloy of the first metal material and the second metal material, is indefinite. The above noted subject matter previously recited in claim 1 is presently recited in claim 10, and the above rejection will be discussed with respect to that claim. Claim 1 is amended to remove this feature.

In rejecting the above feature, the Office Action asserts that the above feature is indefinite because a eutectic melting point of an alloy is an example of a composition percentage of elemental metals which results in a lower melting point than one of the elemental metals. However, this assertion is incorrect. The existence of a single proportional

mixture of an alloy (eutectic mixtures of Cu-Sn and Au-Sn) with a melting point below the melting point of one of its elemental metals does not preclude the use of an alloy with a mixture with a melting point above that of one of its elemental metals. It is to be noted that the above feature recites “an alloy” and not “every alloy” or “all alloys.” In fact, the *ASM* reference shows non-eutectic mixtures with melting points in accordance with the above feature of claim 10 for Cu-Sn and Au-Sn alloys, any of which may correspond to an alloy as recited in claim 10. Therefore, the *ASM* reference shows that the feature “the second metal material has a lower melting point in an elemental state than an alloy of the first metal material and the second metal material” is definite.

The Office Action asserts that the phrase “the diffusion protection film ... uncovers” recited in claim 3 is unclear. The subject matter previously recited in claim 3 and presently recited in claim 1 is amended to recite “the diffusion protection film partially covering” in order to over come this rejection.

The Office Action asserts that claim 7 is unclear because the claim recites an insulating substrate, while claim 4, on which claim 7 depends, recites a semiconductor substrate. This assertion is incorrect. In rejecting claim 7, the Office Action incorrectly equates two distinct substrates with distinct properties as a single substrate with conflicting properties. As shown and discussed by way of example in Figs. 1 and 2, and paragraph [0028] of the disclosure of this application, a semiconductor chip 1 may be a semiconductor substrate 11 on which a bump B1 is formed. Further, Fig. 6 and paragraph [0047] of the disclosure of this application respectively show and discuss exemplary embodiments of a

configuration in which a wiring board 40 having a wiring conductor 42 is disposed on an insulting substrate 41. Therefore, claim 7 is definite as the claim refers to an insulating substrate different from a semiconductor substrate.

In view of the above, reconsideration and withdrawal of the pending rejection of claims 1-7 under §112 is respectfully requested.

The Office Action rejects claims 1, 2 and 5 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,367,195 to *DiGiacomo et al.* (hereinafter “*DiGiacomo*”), and relying on *ASM*; and rejects claims 1, 2 and 4 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent Application Publication No. 2002/0047217 to *Zakel et al.* (hereinafter “*Zakel*”). The Office Action rejects claims 1 and 2 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Application Publication No. 2005/0224991 to *Yeo* (hereinafter “*Yeo*”). Further, the Office Action rejects claim 6 as being unpatentable over *Zakel* in view of U.S. Patent No. 6,133,637 to *Hikita et al.* The cancellation of claim 2 renders the above rejections moot with respect to that claim.

The Office Action asserts that claim 1 recites features directed to intended use “for bonding” which are not patentably structurally distinct from the applied *DiGiacomo*, *Yeo* and *Zakel* references. Added Claim 15 recites a patentably distinct structural difference of a bonding film to bond the electronic device to an electrical connection portion to further distinguish this claim over the applied references.

In view of the above, none of the above applied references, either alone or in combination, can reasonably be considered to teach the subject matter recited in pending

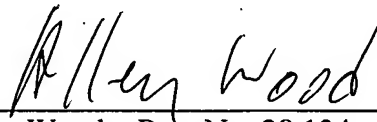
independent claim 1 as amended to incorporate the allowable subject matter previously recited in claim 3.

Accordingly, withdrawal of the pending rejections of the Office Action under §§102 and 103 is respectfully requested.

For the foregoing reasons, it is respectfully submitted that this application is now in condition for allowance. Reconsideration of the application is therefore respectfully requested.

Respectfully submitted,

May 15, 2009
Date


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